Natural Products

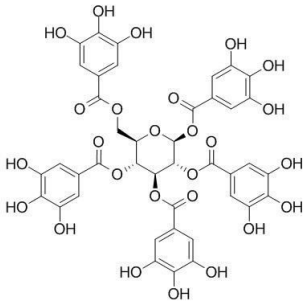
ChemFaces

1,2,3,4,6-O-Pentagalloylglucose Datasheet

4th Edition (Revised in July, 2016)

[Product Information]

Name: 1,2,3,4,6-O-Pentagalloylglucos



Catalog No.: CFN90192

Cas No.: 14937-32-7

Purity: >=98%

M.F: $C_{41}H_{32}O_{26}$

M.W: 940.68

Physical Description: Powder

Synonyms: 1,2,3,4,6-Penta-O-galloyl-beta-D-glucopyranose; Beta-penta-O-galloyl-glucose.

[Intended Use]

1. Reference standards;
2. Pharmacological research;
3. Synthetic precursor compounds;
4. Intermediates & Fine Chemicals;
5. Others.

[Source]

The peel of *Punica granatum L.*

[Biological Activity or Inhibitors]

1,2,3,4,6-Pentagalloylglucose and gallic acid from Pistacia lentiscus have antimutagenic and antioxidant activities.[1]

1,2,3,4,6-Penta-O-galloyl-beta-D-glucose (PGG) possesses potent anti-proliferative and anti-invasive effects, it also has inhibition of inducible nitric oxide synthase and cyclooxygenase-2 activity; suggests that PGG might be a candidate for developing anti-inflammatory and cancer chemopreventive agents.[2]

1,2,3,4,6-Penta-O-galloyl-beta-D-glucopyranose (beta-PGG), one of the components of tannic acid, as well as its natural anomer alpha-PGG possess activity; alpha-PGG, the more potent of the two anomers, reveal that inhibitors that block the insulin-mediated glucose transport, including one that inhibits the insulin receptor (IR), also completely abolish the glucose transport activated by alpha-PGG, alpha-PGG induces phosphorylation of the IR and Akt, activates PI 3-kinase, and stimulates membrane translocation of GLUT 4; suggest that PGG may serve as a model for the development of new types of anti-diabetic and anti-metabolic syndrome therapeutics. [3]

1,2,3,4,6-Penta- O -galloyl-β- d -glucose has vasodilatory and anti-inflammatory effects, it dilates vascular smooth muscle and suppresses the vascular inflammatory process via endothelium-dependent nitric oxide (NO)/cGMP signaling.[4]

1,2,3,4,6-Penta-O-galloyl-beta-D-glucose can decrease the level of extracellular hepatitis B virus (HBV) (IC50, 1.0 microg/ml) in a dose-dependent manner, it also can reduce the HBsAg level by 25% at a concentration of 4 microg/ml; the gallate structure of PGG may play a critical role in the inhibition of anti-HBV activity, suggests that PGG could be a candidate for developing an anti-HBV agent.[5]

1,2,3,4,6-Penta-O-galloyl-β-D-glucose has anti-parasitic activity, displays an EC50 value of 67 μM, at least 6.6-fold more effective than the standard drug benznidazole against trypomastigote forms of T. cruzi.[6]

[Solvent]

Pyridine, Methanol, Ethanol, etc.

[HPLC Method][7]

Mobile phase: Acetonitrile -0.1% Phosphoric acid H2O,gradient elution ;

Flow rate: 1.0 ml/min;

Column temperature: 30 ℃;

The wave length of determination: 274 nm.

[Storage]

2-8℃, Protected from air and light, refrigerate or freeze.

[References]

[1] Abdelwahed A. *Chem.Biol.Interact., 2007, 165(1):1-13.*

[2] Lee S J, Lee I S, Mar W. *Arch. Pharm.Res., 2003, 26(10):832-9.*

[3] Li Y, Kim J, Li J, *et al. Biochem. Bioph. Res. Co., 2005, 336(2):430-7.*

[4] Dae Gill Kang, Mi Kyoung Moon, Deok Ho Choi,*et al. Eur. J.Pharmacol., 2005, 524(1-3):111-9.*

[5] Lee S J, Lee H K, Jung M K, *et al. Biol. Pharmaceut. Bul., 2006, 29(10):2131-4.*

[6] Santos R T D, Hiramoto L L, Lago J H G, *et al.Química Nova, 2012, 35(11):2229-332.*

[7] Xie J L, Zhang Z Q, Yang C, *et al. Chinese Journal of Experimental Traditional Medical Formulae, 2013, 13:162-3.*

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